

IN THE CLAIMS:

A marked up version of the claims, showing insertions and deletions, is included here:

1-30 (Previously Canceled).

31. (Currently Amended) A torsional electrostatic combdrive, comprising:
a stationary combteeth assembly having first combteeth; and
a moving combteeth assembly, including a mirror and one or more elongated combteeth spines coupled to sides of the mirror, each combteeth spine having a major axis and extending directly away from a respective side of the mirror, the one or more combteeth spines each having second combteeth extending therefrom for engaging the first combteeth.

32. (Currently Amended) ~~The torsional electrostatic combdrive of claim 31~~ A torsional electrostatic combdrive, comprising:
a stationary combteeth assembly having first combteeth; and
a moving combteeth assembly, including a mirror and one or more elongated combteeth spines coupled to and extending away from sides of the mirror, the one or more combteeth spines each having second combteeth extending therefrom for engaging the first combteeth;

wherein the moving combteeth assembly is positioned entirely above the stationary combteeth assembly by a predetermined vertical displacement during a combdrive resting state.

33. The torsional electrostatic combdrive of claim 32 wherein the predetermined vertical displacement is between 0.2 and 3.0 microns.

34. The torsional electrostatic combdrive of claim 31 wherein the mirror is formed of single-crystal silicon.

35. The torsional electrostatic combdrive of claim 34 wherein the first combteeth are positioned between the second combteeth of the stationary combteeth assembly during a combdrive activation state, and the mirror intersects the plane defined by the first combteeth during the combdrive activation state.

36. The torsional electrostatic combdrive of claim 35 wherein the mirror pivots about a torsional hinge during the combdrive activation state.

37. The torsional electrostatic combdrive of claim 31 wherein the moving combteeth assembly further includes an anchor, a torsional hinge being positioned between the mirror and the anchor.

38. The torsional electrostatic combdrive of claim 31 wherein the moving combteeth assembly has a thickness of between 10 and 500 microns.

39. The torsional electrostatic combdrive of claim 38 wherein the moving combteeth assembly has a thickness of between 50 and 100 microns.

40. The torsional electrostatic combdrive of claim 31 wherein the mirror has a lateral length of less than 10 millimeters.

41. The torsional electrostatic combdrive of claim 31 wherein the mirror has a lateral length of between 550 and 2000 microns.

42. (Previously canceled)

43. The torsional electrostatic combdrive of claim 31 wherein the position of the moving combteeth assembly is adjusted in response to a capacitance value measured between the moving combteeth assembly and the stationary combteeth assembly.

44. The torsional electrostatic combdrive of claim 31 further comprising transparent substrates enclosing the stationary combteeth assembly and the moving combteeth assembly.

45. (Previously canceled)

46. The torsional electrostatic combdrive of claim 31 wherein the mirror includes a multilayer optical filter.

47. The torsional electrostatic combdrive of claim 31, wherein the one or more combteeth spines define a plane that is perpendicular to and intersecting the surface of the mirror.

48. The torsional electrostatic combdrive of claim 47, wherein the second combteeth are positioned on a first side of the plane.

49. (Previously Amended) The torsional electrostatic combdrive of claim 48, the moving combteeth assembly further comprising:

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Amendment

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a torsional hinge about which the mirror pivots during a combdrive activation state;
and
one or more anchors coupled to the torsional hinge, wherein the one or more anchors are positioned on a second side of the plane.

50. (Previously Added) The torsional electrostatic combdrive of claim 31, wherein the combteeth spines are elongated structures and the second combteeth extend perpendicularly away from the combteeth spines.

51. (Previously Added) The torsional electrostatic combdrive of claim 31, wherein the torsional electrostatic combdrive is configured to maintain the mirror at a static position.

52. (Previously Added) A torsional electrostatic combdrive, comprising:
a stationary combteeth assembly having first combteeth; and
a moving combteeth assembly, including a mirror and a pair of combteeth spines coupled to sides of the mirror, each combteeth spine having a major axis and extending in opposite directions directly away from respective sides of the mirror, the combteeth spines each having second combteeth extending therefrom for engaging the first combteeth.

53. (Previously Added) The torsional electrostatic combdrive of claim 52, wherein the combteeth spines are elongated structures and the second combteeth extend perpendicularly away from the combteeth spines.

54. (Previously Added) The torsional electrostatic combdrive of claim 52, wherein the first combteeth extending from a first combteeth spine of the pair of combteeth spines and the second combteeth extending from a second combteeth spine of the pair of combteeth spines extend from the combteeth spines in a same direction.

55. (Previously Added) The torsional electrostatic combdrive of claim 52, wherein the torsional electrostatic combdrive is configured to maintain the mirror at a static position.

56. (Currently Amended) ~~The torsional electrostatic combdrive of claim 52~~ A torsional electrostatic combdrive, comprising:
a stationary combteeth assembly having first combteeth; and
a moving combteeth assembly, including a mirror and a pair of combteeth spines coupled to and extending in opposite directions away from sides of the mirror, the combteeth spines each having second combteeth extending therefrom for engaging the first combteeth;

wherein the moving combteeth assembly is positioned entirely above the stationary combteeth assembly by a predetermined vertical displacement during a combdrive resting state.

57. (Previously Added) The torsional electrostatic combdrive of claim 56 wherein the predetermined vertical displacement is between 0.2 and 3.0 microns.

58. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the mirror is formed of single-crystal silicon.

59. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the first combteeth are positioned between the second combteeth of the stationary combteeth assembly during a combdrive activation state, and the mirror intersects the plane defined by the first combteeth during the combdrive activation state.

60. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the mirror pivots about a torsional hinge during the combdrive activation state.

61. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the moving combteeth assembly further includes an anchor, a torsional hinge being positioned between the mirror and the anchor.

62. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the moving combteeth assembly has a thickness of between 10 and 500 microns.

63. (Previously Added) The torsional electrostatic combdrive of claim 62 wherein the moving combteeth assembly has a thickness of between 50 and 100 microns.

64. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the mirror has a lateral length of less than 10 millimeters.

65. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the mirror has a lateral length of between 550 and 2000 microns.

66. (Previously canceled)

67. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the position of the moving combteeth assembly is adjusted in response to a capacitance value measured between the moving combteeth assembly and the stationary combteeth assembly.

68. (Previously Added) The torsional electrostatic combdrive of claim 52 further comprising transparent substrates enclosing the stationary combteeth assembly and the moving combteeth assembly.

69. (Previously Added) The torsional electrostatic combdrive of claim 52 wherein the mirror includes a multilayer optical filter.

70. (Previously Added) The torsional electrostatic combdrive of claim 52, wherein the one or more combteeth spines define a plane that is perpendicular to and intersecting the surface of the mirror.

71. (Previously Added) The torsional electrostatic combdrive of claim 70, wherein the second combteeth are positioned on a first side of the plane.

72. (Previously Added) The torsional electrostatic combdrive of claim 71, the moving combteeth assembly further comprising:

a torsional hinge about which the mirror pivots during a combdrive activation state;

and

one or more anchors coupled to the torsional hinge, wherein the one or more anchors are positioned on a second side of the plane.

73. (Previously Added) The torsional electrostatic combdrive of claim 31, wherein the one or more elongated combteeth spines each has a longitudinal axis extending in a direction away from a respective side of the mirror.

74. (Previously Added) The torsional electrostatic combdrive of claim 52, wherein the pair of combteeth spines each has a longitudinal axis extending in opposite directions away from a respective side of the mirror.